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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,507	10/29/2003	Allen Samuels	2006579-0757 (CTX-290)	5753

69665 7590 11/14/2007		EXAMINER
CHOATE, HALL & STEWART / CITRIX SYSTEMS, INC.		RIVAS, SALVADOR E
TWO INTERNATIONAL PLACE		
BOSTON, MA 02110		

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/696,507	SAMUELS ET AL.
	Examiner	Art Unit	
	Salvador E. Rivas	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3,5-8,10-15, 17-20 and 22-25* is/are rejected.

7)☒ Claim(s) *4,9,16 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *November 12, 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail. Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This Action is in response to Applicant's amendments filed on August 13, 2007.

Claims 2-25 are now pending in the present application. **This Action is made non-**

final.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 13 is dependent on claim 1 which was cancelled by

applicant rendering claim 13 indefinite.

For the purpose of prior art rejection, Examiner will consider claim 13 to be

dependent on claim 10 instead of claim 1.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein ·

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Neale et al. (U.S. Patent Application Publication # 2003/0131079 A1)** in view of

Dempo (U.S. Patent # 6,934,288 B2) and in view of **Donzis et al. (U.S. Patent #**

6,973,097 B1).

Regarding **claims 2 and 14**, Neale et al. teach a system for performing by

proxies (Fig.1 102, 106) discovery of a maximum transmission unit of a path (read as a

path MTU Discovery mechanism (paragraph [0028], Lines 2-3)) between a client (Fig. 1

@ 101) and a server (Fig. 1 @ 107) in a more efficient manner, the system (Fig.1)

comprising: a first proxy (Fig.1 @ 102) and a second proxy (Fig.1 @ 106) for

transmitting network packets between a client (Fig. 1 @ 101) and a server (Fig. 1 @

107). However, Neale et al. fails to teach determining a size for a path maximum

transmission unit (PMTU) for transmitting network packets, repacketizing packets received into packet sizes in accordance with the size of the PMTU, and transmitting the repacketized packets; and detecting a packet received from transmission of repacketized packets is fragmented, and transmitting an acknowledgement packet marked with an indicator that fragmentation has occurred.

Dempo teaches a fragmentation processing device (Fig.1 @ 10) determining a size for a path maximum transmission unit (PMTU) for transmitting network packets ("comparing the size of the IP packets with an MTU size, and determining, in the case where the size of the IP packets is larger than the MTU (Maximum Transfer Unit) size, that the IP packets require to have a fragmentation process executed.", Column 2 Lines 19-23), repacketizing packets received into packet sizes in accordance with the size of the PMTU, and transmitting the repacketized packets("a fragmentation process is executed and an IP packet of the above size A is divided into IP packets of the MTU size or smaller and then sent." Column 1 Lines 30-32). It would have been obvious to a person of ordinary skill in the art to combine Dempo with Neale et al. for the purpose of fragmenting a data packet coming from a source (e.g., client) into smaller size packets in order to transmit data to a destination (e.g., server). The motivation being for efficiently transport packets in a communication network.

However, Neale et al. and Dempo fail to teach wherein the second proxy is detecting a packet received from transmission of repacketized packets is fragmented, and transmitting an acknowledgement packet marked with an indicator that fragmentation has occurred to the first proxy. Donzi et al. teach a system that contains a

controller "adapted to receive a ... message containing a data portion and an indication of a size for the data portion" (Column 2 Lines 42-44) and where that system "... server system 112 receives a request from the client system 104, the server system 112 knows about the reduced maximum length and sends response IP packets of the appropriate size" (Column 2 Lines 42-44). It would have been obvious to a person of ordinary skill in the art to combine Donzi et al with Neale et al. and Dempo for the purpose of determining the size of data packets being received and establishing a notification acknowledgement along with an indicator of the type of data packets (even those data packets that have been partitioned due to a limit of the size of data being exchanged) traveling between client and server systems. The motivation being to improve the performance, efficiency, and user experience of systems transporting TCP/IP traffic.

Regarding **claims 3 and 15**, and **as applied to claims 2 and 14 above**, Dempo, as modified by Neale et al. (teaches PEP1 (Fig.1 @ 102)) and Donzis et al., teaches a system (Fig.1 @ 10) wherein step (a) comprises determining, by the first proxy (read as Fig.1 @ 102 from the communication system in Neale et al.), a value for the PMTU greater than the current value of the PMTU ("The IP header processing division **30** compares the extracted IP packet (length) with the MTU size to examine whether the IP packet exceeds the MTU size.", Column 5 Lines 13-15).

Regarding **claims 5 and 17**, and **as applied to claims 2 and 14 above**, Dempo, as modified by Neale et al. (teach PEP1 (Fig.1 @ 102)) and Donzis et al., teaches a system wherein step (c) comprises transmitting, by the first proxy (read as Fig.1 @ 102

from the communication system in Neale et al.), the repacketized packets without one of prohibiting fragmentation or setting the defragmentation flag of the packet off ("...the fragmentation processing determination means that the IP packets do not require to have a fragmentation process executed, assembling IP packets from the fixed packets in the order in which they are inputted to the fragmentation processing device and sending them ...", Column 2, Lines 40-45).

Regarding **claims 6 and 18**, and **as applied to claims 2 and 14 above**, Neale et al., as modified by Dempo, teaches a system wherein step (e) comprises generating, by the second proxy (Fig.1 @ 106), the acknowledgement packet ("when a data packet arrives at its receiver, an acknowledgement packet is formed ...", paragraph [0051] Lines 2-4) to have a bit (read as an acknowledgement type bit flag (Fig.5 @ 514)) to indicate that fragmentation has occurred ("... and the bit fields could indicate contiguous packets, older or newer, ...", paragraph [0050] Lines 13-19). However, Neale et al., as modified by Dempo, fails to teach a TCP header.

Donzis et al. teach a TCP header (Fig.6 @ 600)). It would have been obvious to a person of ordinary skill in the art to combine Donzi et al with Neale et al., as modified by Dempo, for the purpose of TCP header containing a size of data packets field and establishing a notification acknowledgement field along with an indicator of the type of data packets (even those data packets that have been partitioned due to a limit of the size of data being exchanged) traveling between client and server systems. The motivation being to improve the performance, efficiency, and user experience of systems transporting TCP/IP traffic.

Regarding **claims 7 and 19**, and **as applied to claims 2 and 14 above**, Donzis

et al., as modified by Dempo and Neale et al. (teach PEP2 (Fig.1 @ 106)), teach a

system wherein step (e) comprises generating, by the second proxy (Fig.1 @ 106), the

acknowledgement packet ("when a data packet arrives at its receiver, an

acknowledgement packet is formed ...", paragraph [0051] Lines 2-4) set to indicate that

fragmentation has occurred ("...this acknowledgement field may indicate the newest

packet acknowledged ... or the oldest packet acknowledged ...", paragraph [0050]

Lines 15-17). However, Neale et al., as modified by Dempo, fail to teach an option field

in a transport control protocol header (read as TCP header (Fig.6 @ 600)).

Donzis et al. teach a TCP header (Fig.6 @ 600)) and an option field (read as

option field (Fig.6 @ 612)). It would have been obvious to a person of ordinary skill in

the art to combine Donzi et al with Neale et al., as modified by Dempo, for the purpose

of TCP header containing an option field to be used for acknowledging a

repacketizing/fragmentation of data packets. The motivation being to improve the

performance, efficiency, and user experience of systems transporting TCP/IP traffic.

Regarding **claims 8 and 20**, and **as applied to claim 2 and 14 above**, Donzis et

al., as modified by Neale et al. (teach a PEP2 (Fig.1 @ 106)) and Dempo, teach a

system wherein step (e) comprises generating, by the second proxy (read as Fig.1 @

106 from the communication system in Neale et al.), the acknowledgement packet to

have a field in an internet protocol header ("... includes an IP header" Column 1 Line

59) set to indicate that fragmentation has occurred ("... server system 112 receives a

request from the client system 104, the server system 112 knows about the reduced

maximum length and sends response IP packets of the appropriate size", Column 2, Lines 42-44).

Regarding **claims 10 and 22**, and **as applied to claims 2 and 14 above**, Neale et al., as modified by Dempo and Donzis et al., teaches a system (Fig.1) comprising reducing, by the first proxy (read as PEP1 (Fig.1 @ 102)), the size of the PMTU in response to receipt of the acknowledgement packet (The PEP intercepts an ICMP message prompting for the PEP to "reduce its path MTU estimate and retransmits the data packet into smaller packets..." (paragraph [0047] Lines 20-21) destined for the server (Fig.1 @ 107)).

Regarding **claims 11 and 23**, and **as applied to claims 10 and 14 above**, Dempo, as modified by Neale et al. (teaches PEP1 (Fig.1 @ 102)) and Donzis et al., teaches a system (Fig.1 @ 10) comprising transmitting, by the first proxy (read as Fig.1 @ 106 from the communication system in Neale et al.), repacketized client packets formed in accordance with the size of the decreased PMTU ("...creating a plurality of IP packets of a size smaller than the MTU size ... in the order in which they are inputted to the fragmentation processing device, sending these IP packets, ...", Column 2 Lines 34-35).

Regarding **claim 12 and 24**, and **as applied to claims 10 and 14 above**, Neale et al., as modified by Dempo and Donzis et al., teaches a system (Fig.1), comprising reducing the size of the PMTU (The PEP intercepts an ICMP message prompting for the PEP to "reduce its path MTU estimate and retransmits the data packet into smaller packets..." (paragraph [0047] Lines 20-21) destined for the server (Fig.1 @ 107)).

However, Neale et al, as modified by Dempo and Donzis et al., fail to teach the reduction of the PMTU size by one-half. One of ordinary skill in the art, would have expected Applicant's invention to perform equally well with Neale et al., as modified by Dempo and Donzis et al., because as long as the data packets are reduced to a smaller sized compared to the original MTU size for the purpose of the transmission of data to occur to a selected receiver (server system) on a given network.

Regarding **claim 13 and 25**, and **as applied to claims 10 and 14 above**, Neale et al., as modified by Dempo and Donzis et al., teaches a system (Fig.1) wherein step (a) comprising triggering the determination of the PMTU by the first proxy (read as PEP1 (Fig.1 @ 102) "... interact with the PMTUD mechanism", paragraph [0054] Lines 2-3) in response to one of receipt of the indicator that fragmentation has occurred or an elapse of time ("... treatment of the packet stream as a byte stream at the PEP devices and a timer to wait for following packets should be minimize further small (less than path MTU estimate) packets being sent.", paragraph [0054] Lines 6-9).

Allowable Subject Matter

4.   **Claims 4, 10, 16, and 21** are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

5.   **THIS ACTION IS MADE NON-FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed**

to:

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

> Customer Service Window
> Randolph Building
> 401 Dulany Street

Alexandria, VA 22314

Any inquiry concerning this communication or early communications from the Examiner should be directed to Salvador E. Rivas whose telephone number is (571) 270-1784. The examiner can normally be reached on Monday-Friday from 7:30AM to 5:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Huy D. Vu can be reached on (571) 272- 3155. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Salvador E. Rivas
S.E.R./ser

November 13, 2007

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600